

What is claimed is:

Sub B1 1. A method of modifying a signal comprising:
Providing a first signal which includes an unwanted signal;
Providing an alternate signal which includes a lower proportion of said unwanted signal;
Supplying said first and alternate signals to first and second signal processors,
respectively;

Adjusting a level for a selected frequency band of said first signal and said alternate
signal with said respective first and second processors, such that an increase of level in one of
said first and alternate signals results in a decrease in level in the other of said first and alternate
signals; and

Combining said first and alternate signals after said adjusting step.

2. The method of claim 1 wherein a magnitude of said increase in level is equal to a
magnitude of said decrease in level.

3. The method of claim 1 further comprising:
Adjusting the level of the first and alternate signals prior to providing said first and
alternate signals to said signal processors.

sub-C 2 4. The method of claim 1 further comprising:
Separately adjusting said selected frequency bands for the first and alternate signals.

5. A method of modifying a signal comprising:

Providing a first signal which includes an unwanted signal;

Providing an alternate signal which includes a lower proportion of said unwanted signal;

Supplying said first and alternate signals to first and second groups of signal processors, respectively;

Adjusting a level for selected frequency bands of said first signal and said alternate signal with ones of said respective first and second groups of signal processors, such that an increase of level in a specified frequency band of one of said first and alternate signals results in a decrease in level in the other of said first and alternate signals in said specified frequency band; and

Combining said first and alternate signals after said adjusting step.

6. The method of claim 5 wherein in said supplying step, said first group of signal processors are coupled in series and said second group of signal processors are coupled in parallel, and in said combining step, corresponding outputs of signal processors from said first and second groups of processors are summed individually.

7. The method of claim 6 wherein in said combining step an unaltered alternate signal is combined with said first and alternate signals after said adjusting step.

Sub B2

8. A method of processing signals comprising:
Providing a first signal from a first position relative to an instrument which includes an unwanted signal;

Providing an alternate signal from a second position relative to said instrument which includes a lower proportion of said unwanted signal;

Supplying said first and alternate signals to first and second signal processors, respectively;

Adjusting a level for a selected frequency band of said first signal and said alternate signal with said respective first and second processors, such that an increase of level in one of said first and alternate signals results in a decrease in level in the other of said first and alternate signals; and

Combining said first and alternate signals after said adjusting step.

9. The method of claim 8 further comprising:

Adjusting a gain of said first and alternate signals prior to supplying said first and alternate signals to said first and second signal processors or groups of processors.

10. The method of claim 8 wherein said instrument is a snare drum and said first location is above said snare drum and said second location is below said snare drum.

11. The method of claim 10 wherein in said adjusting step, a preset ratio of said gain for the alternate signal is between 11 and 5 dB lower than said gain for said first signal.

12. The method of claim 8 wherein one of said first and second signal processors is a high-pass filter and the other of said first and second signal processors is a low pass-filter.

13. The method of claim 12 where a pole for each of said filters is set at 1 kHz.

14. The method of claim 12 where a pole of the high-pass filter is set at 1 kHz, and a pole of the low-pass filter is variable between a first order low-pass at approximately 160 Hz and a second order low-pass at approximately 8 kHz.

15. The method of claim 12 further comprising:

Adjusting a pole for each of said high-pass and low-pass filters.

16. The method of claim 12 where at high frequency poles said high-pass and low-pass filters overlap approximately one octave and at low frequency poles said high-pass and low-pass filter overlap approximately one-third of an octave.

17. The method of claim 15 where an approximate adjustment range of the high-pass filter frequency pole is between 160 Hz and 8 kHz, in conjunction with an approximate adjustment range of the low-pass filter being between 125 Hz to 4 kHz.

18. The method of claim 17 wherein ~~said~~ instrument is a snare drum and said first location is above said snare drum and said ~~second~~ location is below said snare drum.

Sub B³ 19. An apparatus for modifying a signal comprising:
a first signal source generating a first signal including an unwanted signal;
an alternate signal source providing an alternate signal including a lower proportion of said unwanted signal; and
first and second signal processors adapted to receive said first and alternate signals, respectively, and adapted to adjust a level for a selected frequency band of said first signal and said alternate signal with said respective first and second processors, such that an increase of level in one of said first and alternate signals results in a decrease in level in the other of said first and alternate signals.

20. The apparatus of claim 19 wherein a magnitude of said increase in level is equal to a magnitude of said decrease in level.

21. The apparatus of claim 19 wherein ~~said selected frequency bands are separately adjusted~~
~~for the first and alternate signals.~~

22. An apparatus for modifying a signal comprising:
a first signal source providing a first signal which includes an unwanted signal;

an alternate signal source providing an alternate signal which includes a lower proportion of said unwanted signal; and

first and second groups of signal processors adapted to receive said first and alternate signals, respectively, and adapted to adjust a level for selected frequency bands of said first signal and said alternate signal with ones of said respective first and second groups of signal processors, such that an increase of level in a specified frequency band of one of said first and alternate signals results in a decrease in level in the other of said first and alternate signals in said specified frequency band.

23. The apparatus of claim 22 wherein said first group of signal processors are coupled in series and said second group of signal processors are coupled in parallel, and corresponding outputs of signal processors from said first and second groups of processors are summed individually.

24. An apparatus for processing signals comprising:

a first signal source adapted to provide a first signal from a first position relative to an instrument which includes an unwanted signal;

an alternate signal source adapted to provide an alternate signal from a second position relative to said instrument which includes a lower proportion of said unwanted signal; and

first and second signal processors adapted to receive said first and alternate signals, respectively, and adapted to adjust a level for a selected frequency band of said first signal and said alternate signal with said respective first and second processors, such that an increase of

level in one of said first and alternate signals results in a decrease in level in the other of said first and alternate signals.

25. The apparatus of claim 24 wherein said instrument is a snare drum and said first location is above said snare drum and said second location is below said snare drum.

26. The apparatus of claim 24 wherein one of said first and second signal processors is a high-pass filter and the other of said first and second signal processors is a low pass-filter.

27. The apparatus of claim 26 where at high frequency poles said high-pass and low-pass filters overlap approximately one octave and at low frequency poles said high-pass and low-pass filters overlap approximately one-third of an octave.

28. The apparatus of claim 24 wherein said first signal source includes an acoustic pressure microphone and said alternate signal source includes an accelerometer pickup.

29. The apparatus of claim 24 wherein said first signal source includes an acoustic pressure microphone and said alternate signal source includes an electromagnetic pickup.

30. An apparatus for modifying a signal comprising
a first signal source providing a first signal which includes an unwanted signal from a guitar;

an alternate signal source providing an alternate signal which includes a lower proportion of said unwanted signal from said guitar; and

first and second groups of signal processors adapted to receive said first and alternate signals, respectively, and adapted to adjust a level for selected frequency bands of said first signal and said alternate signal with ones of said respective first and second groups of signal processors, such that an increase of level in a specified frequency band of one of said first and alternate signals results in a decrease in level in the other of said first and alternate signals in said specified frequency band.

31. The apparatus of claim 30 wherein said first signal source includes an acoustic pressure microphone and said alternate signal source includes an accelerometer pickup.

32. The apparatus of claim 30 wherein said first signal source includes an acoustic pressure microphone and said alternate signal source includes an electromagnetic pickup.

33. A method of modifying signals comprising:

Providing first and second signals;

Selecting a frequency band to be band-rejected in said first signal and band-passed in said second signal;

Inverting said second signal;

Combining said inverted second signal with said first signal;

Processing said combined signal to bandpass the selected frequency band;

Inverting said combined, bandpassed signal; and

Adding said first signal to said inverted, combined, bandpassed signal.

34. A method of modifying signals comprising:

Providing first and second signals;

Selecting a frequency band to be band-rejected in said first signal and band-passed in said second signal;

Inverting said first signal and combining it with said second signal;

Processing said combined signal to bandpass the selected frequency band; and

Adding said first signal to said combined, bandpassed signal.

35. A method of modifying signals comprising:

Providing first and second signals

Selecting a frequency band to be band-rejected in said first signal and band-passed in said second signal;

Combining said first signal with said second signal;

Processing said combined signal to bandpass the selected frequency band;

Inverting said first signal 180 degrees; and

Adding said inverted first signal to said combined, bandpassed signal.

067230-062460